# REMARKS

This Amendment is fully responsive to the final Office Action dated April 8, 2009, issued in connection with the above-identified application. Claims 26-58 were previously pending in the present application. With this Amendment, claims 29, 46 and 47 have been amended; and claim 60 have been canceled without prejudice or disclaimer to the subject matter therein. No new matter has been introduced by the amendments made to the claims. Favorable reconsideration is respectfully requested.

In the Office Action, the Examiner indicates that the features of claim 60 are allowable. In particular, the Examiner indicates that the calculation in claim 60 is not disclosed or suggested by the cited prior art. Accordingly, the features of claim 60 have be incorporated into independent claims 29, 46 and 47.

In the Office Action, claims 29, 30, 32-34, 46 and 47 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Chang (U.S. Publication No. 2003/0171931, hereafter "Chang") in view of Nguyen et al. (U.S. Patent No. 6,263,309, hereafter "Nguyen") and Rigazio et al. (U.S. Patent No. 6,526,379, hereafter "Rigazio"); and claim 59 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Chang in view of Nguyen and Rigazio, and further in view of Leggetter et al. (U.S. Patent No. 7,191,130, hereafter "Leggetter").

The Applicant has amended independent claims 29, 46 and 57 to help further distinguish the present invention from the cited prior art. Specifically, independent claims 29, 46 and 47 have been amended to include the features of claim 60 (now canceled). For example, independent claim 29 recites *inter alia* the following features:

"[a] standard model creating apparatus for creating a standard model which shows an acoustic characteristic having a specific attribute and is used for speech recognition in an electronic apparatus used by a user, the standard model creating apparatus using a probability model that expresses a frequency parameter showing an acoustic characteristic as an output probability, the standard model creating apparatus comprising:...

said standard model structure determining unit is configured to determine a Gaussian mixture distribution having an Mf (Mf $\geq$ 1) number of mixture distributions as

the structure of the standard model, and

said statistics estimating unit is configured to calculate at least one

of a mixture weighting coefficient $\omega_{f(m)}$ $(m = 1, 2, ..., M_f)$, a mean

value $\mu_{f(m)}$ $(m = 1, 2, ..., M_f)$, and a variance $\sigma^2_{f(m)}$ $(m = 1, 2, ..., M_f)$ which are the

statistics of the standard model $\sum_{m=1}^{M_f} \omega_{f(m)} f(x; \mu_{f(m)}, \sigma^2_{f(m)})$ (where

$f(x; \mu_{f(m)}, \sigma^2_{f(m)})$ $(m = 1, 2, ..., M_f)$ represents a Gaussian distribution, and $x$ represents

input data) represented by the Gaussian mixture distribution so as to maximize or locally

maximize a likelihood

$$\log P = \sum_{i=1}^{N_g} \int_{-\infty}^{\infty} \log[\sum_{m=1}^{M_f} \omega_{f(m)} f(x; \mu_{f(m)}, \sigma^2_{f(m)})]\{\sum_{l=1}^{L_{g(i)}} \upsilon_{g(i,l)} g(x; \mu_{g(i,l)}, \sigma^2_{g(i,l)})\} dx$$

of the standard model, with respect to Ng (Ng $\geqq$ 2) reference models

$$\sum_{l=1}^{L_{g(i)}} \upsilon_{g(i,l)} g(x; \mu_{g(i,l)}, \sigma^2_{g(i,l)}) \quad (i = 1, 2, ..., N_g)$$ (where

$g(x; \mu_{g(i,l)}, \sigma^2_{g(i,l)})$ $(i = 1, 2, ..., N_g, l = 1, 2, ..., L_{(i)})$ represents a Gaussian distribution,

$L_{g(i)}$ $(i = 1, 2, ..., N_g)$ represents a mixture distribution of each of the reference models,

$\upsilon_{g(i,l)}$ $(l = 1, 2, ..., L_{g(i)})$ represents a mixture weighting coefficient,

$\mu_{g(i,l)}$ $(l = 1, 2, ..., L_{g(i)})$ represents a mean value, and

$\sigma^2_{g(i,l)}$ $(l = 1, 2, ..., L_{g(i)})$ represents a variance)." (Emphasis added).

The features emphasized above in independent claim 29 are similarly recited in
independent claims 46 and 47 (as amended).

As noted above, the Examiner has indicated that the features of claim 60 are
allowable. Accordingly, independent claims 29, 46 and 47 have been amended to include
the features of claim 60 (now canceled). As amended, independent claims 29, 46 and 47
should be clearly distinguished over the cited prior art of record without any further
comment being necessary.

In light of the above, the Applicant respectfully requests that the Examiner withdraw the rejections in the outstanding Office Action, and pass the present application to issue. The Examiner is invited to contact the undersigned attorney by telephone to resolve any remaining issues.

Respectfully submitted,

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July 1, 2009